

## PROCESS IMPROVEMENT APPLYING "TRIM-FREE" TECHNOLOGY

**ABOUT CARDINAL GLASS INDUSTRIES, INC.** Laminated glass by Cardinal LG offers improved safety and security, noise reduction, impact resistance, and protection from damaging ultraviolet light. The company maintains a leadership position in the glazing industry and serves window manufacturers and home-owners with the latest in applied glass science. As a subsidiary of Cardinal Glass Industries, Cardinal LG Company produces laminated glass for residential applications and is one of 37 Cardinal manufacturing facilities located throughout the United States.

**THE CHALLENGE.** Cardinal LG Production Planning Manager Barb Goodlet asked UW-Stout Manufacturing Outreach Center (MOC) to help the company identify sources of defects within the Amery, Wisconsin, laminated glass (LG) facility and partner with staff to eliminate root causes.

**MEP CENTER'S ROLE.** UW-Stout MOC provided fresh perspective for Cardinal LG, observing the company's processes and listening to team members throughout the plant. As a result, UW-Stout MOC prioritized improvements in three areas: harps/carts, autoclaves, and trimming. Cardinal LG developed kaizen teams to tackle improvements within harps/carts and autoclaves, while UW-Stout MOC brought dramatic change to the trimming process.

To streamline that process value stream, UW-Stout MOC Project Managers Roger Gehring and Todd Edwards first measured the forces needed to trim the "interlayer," then suggested methods to reduce those forces. In a parallel effort, UW-Stout MOC suggested a "trim-free" process where automation would eliminate manual trimming of the interlayer, a concept that was met with some initial skepticism.

Proof-of-concept tests demonstrated that hands-free trimming is, indeed, a viable option of Cardinal LG. In fact, according to Gehring, recommended automation makes the company's trimming process easier, reduces variation, and increases both safety and speed. "We saw a way to remove a lot of non-value-added steps," Gehring recalls, "which yields significant benefits for Cardinal LG's people." To identify potential sources for automated trimming technology, Cardinal LG production managers and UW-Stout MOC staff are currently visiting vendors throughout the country to determine the most capable concepts and companies. The project is scheduled to "go live" in late summer 2019.

"UW-Stout MOC has brought discipline and structure to our facility. Partnering with them has proven to be a cost-effective means to bring positive change, and we look forward to continuing our relationship."

-Barb Goodlet, Production Planning Manager

## RESULTS



Added **115** new positions



**35%** reduction in product defects



**20%** faster run rate in lamination dept.



Increased throughput with operators working at a slower, more deliberate pace



Significant reduction in workplace injuries by decreasing repetitive motion

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